

**THIS OPINION WAS NOT WRITTEN FOR PUBLICATION**

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 11

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte RICHARD W. PEKALA, STEVEN T. MAYER,  
JAMES L. KASCHMITTE and ROBERT L. MORRISON

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Appeal No. 96-0158  
Application No. 08/110,003<sup>1</sup>

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ON BRIEF

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Before KIMLIN, GARRIS and WEIFFENBACH, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on an appeal from the final rejection of claims 1, 2, 11, 12 and 15. The only other claims remaining in the application, which are claims 3, 4, 6, 8-10,

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<sup>1</sup> Application for patent filed August 23, 1993.

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13, 14, 16, 17 and 20-29 have either been allowed or objected to but otherwise allowable.

The subject matter on appeal relates to a method for making carbon foam which comprises uniformly infiltrating a porous material substrate with a carbon foam precursor material until the porous material is saturated and curing the thus saturated porous and precursor materials. This appealed subject matter is adequately illustrated by independent claim 1 which reads as follows:

1. A method for making carbon foam having a thickness of 1 to 40 mils, comprising the steps of:

uniformly infiltrating a porous material substrate having a density of less than 0.2g/cc with a carbon foam precursor material until the porous material is saturated

curing the thus saturated porous and precursor materials;  
and

pyrolyzing the thus cured materials.

The references relied upon by the examiner as evidence of obviousness are:

Marek et al. (Marek)	3,922,334	Nov. 25,
1975		

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Vinton et al. (Vinton) 1975	3,927,186	Dec. 16,
Simandl et al. (Simandl) 4, 1993	5,208,003	May

The claims on appeal stand rejected under 35 U.S.C. § 103 as being unpatentable over Marek taken with Vinton and Simandl<sup>2</sup>.

We refer to the Brief and to the Answer for a complete exposition of the opposing viewpoints expressed by the appellants and the examiner concerning the above noted rejection.

#### OPINION

For the reasons set forth in the Answer and below, we will sustain this rejection.

We fully agree with the conclusion of obviousness stated by the examiner in his Answer. As for the nonobviousness position expressed in the Brief, it is the appellants' basic argument

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<sup>2</sup> The appealed claims will stand or fall together; see page 5 of the Brief.

that the applied references generally and the Marek patent specifically contain no teaching or suggestion of the here claimed feature of uniformly infiltrating a porous material substrate with a carbon foam precursor material until the porous material is saturated and curing the thus saturated porous and precursor materials. Indeed, the appellants contend that "Marek ... actually teaches away from saturation by removing the excess solution by 'pressing' and/or 'air-drying' prior to curing" (Brief, page 7; emphasis in original). We cannot agree with the appellants.

As properly indicated by the examiner, appealed claim 1 does not exclude a pressing or drying step. Indeed, the subject specification expressly discloses a drying step (e.g., see the first paragraph on specification page 6). In any event, the method disclosed by Marek does not require a pressing or drying step (e.g., see the patent claims which recite no such steps and note lines 55-56 in column 2 wherein patentee discloses that "[a]fter removing the soaked form, it ... may be pressed" (emphasis added)). Finally, it is our finding that the pressing step disclosed by Marek is not for the purpose of desaturation as the appellants essentially

contend but instead is for the purpose of removing excess solution and to rupture any solution membranes that may have formed in the pores during the soak (e.g., see line 56 in column 2 and lines 27 through 31 in column 4).

In this latter regard, we emphasize that the soaking step of Marek is intended to ensure that his carbon foam precursor material is absorbed into the polyurethane strands of his porous material substrate to thereby become an integral part of such strands and not simply a coating (e.g., see lines 50 through 55 in column 2). Toward that end, patentee's soaking step may be for a period of time up to four hours or longer (e.g., see lines 44 and 45 in column 3). By ensuring that his solution absorbs into the polyurethane strands so as to fully penetrate the structure (see lines 4 through 6 and 13 through 18 in column 3), patentee achieves a carbonized foam of superior mechanical properties (see lines 20 through 24 in column 2) relative to prior art techniques in which the carbon precursor material simply coated the foam structure (see lines 36 through 66 in column 1 and the paragraph bridging columns 1 and 2).

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In short, it is our view that the disclosure of Marek teaches or at least would have suggested soaking or uniformly infiltrating his porous polyurethane material with his carbon precursor solution until the porous material is saturated (and then curing the thus saturated porous and precursor materials) in order to achieve the absorption and penetration necessary to obtain a carbonized foam having superior mechanical properties as desired by patentee. Stated otherwise, the infiltrating and curing steps of the independent claims on appeal are indistinguishable from or at least would have been obvious over the soaking and curing steps of Marek.

In light of the foregoing, we hereby sustain the examiner's § 103 rejection of claims 1, 2, 11, 12 and 15 as being unpatentable over Marek taken with Vinton and Simandl.

The decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

**AFFIRMED**

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EDWARD C. KIMLIN	)	
Administrative Patent Judge)	)	
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	)	
BRADLEY R. GARRIS	)	BOARD OF PATENT
Administrative Patent Judge)	)	APPEALS AND
	)	INTERFERENCES
	)	
CAMERON WEIFFENBACH	)	
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